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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,519	02/10/2004	Edward McCoy	18525/04071	1060

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EXAMINER	
SALDANO, LISA M	
ART UNIT	**PAPER NUMBER**
3673	

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/775,519	MCCOY, EDWARD	
	Examiner	Art Unit	
	Lisa M. Saldano	3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/10/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4, 5, 10, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 4 and 15, the phrase "or similar particulate matter" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or similar..."), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claims 5 and 10, the applicant recites the limitation "said fiberglass rope has a diameter of about..." However, prior language from which this claim depends fails to disclose a fiberglass rope. There is insufficient antecedent basis for this limitation in the claim. A prior art examination of these claims has been provided as best understood.

Regarding claim 16, the applicant recites limitations wherein "said fiberglass rope has a diameter of about..." This claim is indefinite because claim 15, from which claim 16 depends, does not require a fiberglass rope exclusively. It merely discloses use of either a fiberglass rope,

a length of fiberglass tape OR a contained column of sand or similar particulate matter. A prior art examination of claim 16 has not been provided. Please address this rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 6, 7 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita et al (4,451,175).

Regarding claim 1 and 7, Yamashita et al disclose a method for improving soft ground by sand drain method and cylindrical bag for use in the same comprising a layered soil profile with a earth or sand layer 4, a sand mat layer 5 and a soft ground layer 1 (see Fig.1). Yamashita et al further disclose an array of fibrous capillary drains 3 (see Fig.1) that traverse one or more layers of the soil profile. Yamashita et al disclose that the drains 3 are made of cylindrical bag 3 made of a fiber or split yarn (see column 3, lines 30-35).

Regarding claim 4, Yamashita et al disclose a contained column of sand 3 in the fibrous capillary drains 3 bag (see column 2, lines 60-65).

Regarding claims 6 and 11, Yamashita et al disclose that the invention is used to remove water from the soil layers (see abstract).

5. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumagai et al (JP-03028408-A).

Regarding claims 1 and 3, Kumagai et al disclose a substantially vertical high speed draining structure 1 on surface or ground. Kumagai et al disclose a layered soil profile comprising a mixed earth layer 10, a volcanic gravel layer 11 and another coarse rock layer 12 (see Figs. 2&3). Kumagai et al further disclose that the prefabricated water permeable body 1 is formed by filling an entangling body 2 entangled with chloride fibers with granular resin bodies 3, 2 and a netlike body is formed of a filter net 4.

Regarding claim 2, Kumagai et al disclose the mixed earth layer 10 which functions as a root zone with a volcanic gravel layer 11 beneath the earth or root zone. The draining structure 1 provides a continuous pathway of pores extending from the root zone/ mixed earth layer 10 through the gravel layer 11 (see Fig.6).

Regarding claim 6, Kumagai et al disclose that the invention is used to remove water from the water permeable soil layers (see abstract).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al, as applied to claim 7 above, in view of Kumagai et al (JP-03028408-A).

Yamashita et al disclose a method for improving soft ground by sand drain method and cylindrical bag for use in the same comprising a layered soil profile with a earth or sand layer 4, a sand mat layer 5 and a soft ground layer 1 (see Fig.1). The earth layer 4 is capable of functioning as a root zone. Yamashita et al further disclose an array of fibrous capillary drains 3 (see Fig.1) that traverse one or more layers of the soil profile. Yamashita et al disclose that the drains 3 are made of cylindrical bag 3 made of a fiber or split yarn (see column 3, lines 30-35).

However, Yamashita et al fail to explicitly disclose that soil layers may comprise a gravel layer.

Kumagai et al disclose a substantially vertical high speed draining structure 1 on surface or ground. Kumagai et al disclose a layered soil profile comprising a mixed earth layer 10, a volcanic gravel layer 11 and another coarse rock layer 12 (see Figs. 2&3). Kumagai et al further disclose that the prefabricated water permeable body 1 is formed by filling an entangling body 2 entangled with chloride fibers with granular resin bodies 3, 2 and a netlike body is formed of a filter net 4.

8. Claims 5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al, as applied to claims 1 and 7 above, in view of Horvath et al (5,713,696).

Yamashita et al disclose a method for improving soft ground by sand drain method and cylindrical bag for use in the same comprising a layered soil profile with a earth or sand layer 4, a sand mat layer 5 and a soft ground layer 1 (see Fig.1). The earth layer 4 is capable of functioning as a root zone. Yamashita et al further disclose an array of fibrous capillary drains 3 (see Fig.1) that traverse one or more layers of the soil profile. Yamashita et al disclose that the drains 3 are made of cylindrical bag 3 made of a fiber or split yarn (see column 3, lines 30-35).

However, Yamashita et al fail to disclose use of a fiberglass rope.

Horvath et al disclose a geosynthetic panel 20 with a drainage component (see abstract). Horvath et al disclose that the panel may comprise a water permeable membrane or geotextile, such as fiberglass or similar drainage fabrics (see column 5, lines 57-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Yamashita et al to incorporate the use of fiberglass as a drainage fabric, as taught by Horvath et al, in the form of a fabric or rope. Yamashita et al disclose that the drains 3 are made of cylindrical bag 3 made of a fiber or split yarn. Horvath et al teach that fiberglass may be used as a drainage material. One of ordinary in the skill in the art would have sufficient motivation to use fiberglass in whatever form desired to provide drainage in a soil layer as taught by both the inventions of Yamashita et al and Horvath et al.

9. Claims 12-15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumagai et al (JP-03028408-A) in view of Goughnour (6,312,190).

Regarding claims 12 and 14, Kumagai et al disclose a substantially vertical high speed draining structure 1 on surface or ground. Kumagai et al disclose a layered soil profile

comprising a mixed earth layer 10 that is capable of functioning as a root zone, a volcanic gravel layer 11 and another coarse rock layer 12 (see Figs. 2&3). Kumagai et al further disclose that the prefabricated water permeable body 1 is formed by filling an entangling body 2 entangled with chloride fibers with granular resin bodies 3, 2 and a netlike body is formed of a filter net 4. A plurality of the draining structures are installed at regular intervals and used to drain the soil (see Fig.5).

Regarding claim 13, Kumagai et al disclose the mixed earth layer 10 which functions as a root zone with a volcanic gravel layer 11 beneath the earth or root zone. The draining structure 1 provides a continuous pathway of pores extending from the root zone/ mixed earth layer 10 through the gravel layer 11 (see Fig.6).

Regarding claim 15, Kumagai et al further disclose that the prefabricated water permeable body 1 is formed by filling an entangling body 2 entangled with chloride fibers with granular resin bodies 3, 2 (see Fig.4). The granular resin bodies are particulate matter.

Regarding claim 17, Kumagai et al disclose that the invention is used to remove water from the water permeable soil layers (see abstract).

However, Kumagai et al fail to explicitly disclose a method for draining fluid from a layer soil profile comprising the steps of removing a sample, checking particle size, inferring water retention and inserting the draining structures.

Goughnour discloses a method and apparatus for enhancement of prefabricated composite vertical drains wherein Goughnour discusses that soil samples are used to determine the size of particles for the purpose of coordinating filter fabric of the drains with the soil they

will be used in (see column 1, lines 50-60). Goughnour discusses levels of saturation and pore water property values thereby inferring water retention properties of the soil.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the drainage structure teachings of Kumagai to incorporate the method steps of Goughnour for enhancement of prefabricated composite drains because Goughnour teaches enchancement and therefore provides ample motivation to combine the teachings of Goughnour with the vertical drains taught by Kumagai et al.

Regarding claim 18, although Kumagai et al and Goughnour fail to explicitly disclose that the vertical drains are spaced about 24 inches from one another. Their disclosures are well within the spacing range disclosed by the applicant of the present invention. Furthermore, the applicant has not provided reasons for the criticality of this particular range of drain structure spacing.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumagai et al in view of Goughnour, as applied to claim 12 in further view of Almond et al (5,064,308).

Kumagai et al and Goughnour disclose the features as described above.

However, Kumagai et al and Goughnour fail to disclose that the invention is used on a putting green.

Almond et al disclose a gravity drainage system for use on athletic fields such as golf courses.

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the inventions of either Kumagai et al or Goughnour for drainage of a golf course, as

taught by Almond et al because Kumagai et al teaches the use of vertical drains in a layered soil and Almond et al disclose the use of a drain in a layer soil wherein the soil profile is a golf course. Almond et al provide ample motivation to use a drainage device of any suitable type, such as the one taught by Kumagai et al in a soil profile where the profile is a golf course, which always has a putting green.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumagai et al in view of Goughnour, as applied to claim 12 in further view of Terashima et al (3,859,798).

Kumagai et al and Goughnour disclose the features as described above.

However, Kumagai et al and Goughnour fail to disclose that the invention is used by inserting a material different from the capillary drain into a pilot hole.

Terashima et al disclose a method of constructing a flexible sand drain wherein a pilot hole is created, a casing 22 is attached to the pilot holes and a capillary drain 11 with sand 12 is inserted into the pilot hole. The pilot hole is then backfilled (see Fig.4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Kumagai et al to incorporate the method teaching of provision of a pilot hole and casing, as taught by Terashima et al because Terashima et al provide for a more exact placement of the drain by providing the pilot hole for the invention. Furthermore, the casing allows the drain to be placed in the soil layer with ease as opposed to stuffing the drain in the soil and having to deal with frictional forces that the soil would place on the drain if it were simply forces into the soil without a pilot hole.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Barclay (4,045,964) and Terashima et al (3,928,979) disclose features that are pertinent to the present application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Saldano whose telephone number is 703-605-1167. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on 703-308-2978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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